



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,914	08/26/2003	Brian K. Aegerter	114183-20 (P00-0024US3)	2441
7590	06/29/2005		EXAMINER KORNAKOV, MICHAEL	
Keith V. Rockey Wallenstein Wagner & Rockey, Ltd. 311 South Wacker Drive, 53rd Floor Chicago, IL 60606-6630			ART UNIT 1746	PAPER NUMBER
DATE MAILED: 06/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/647,914

Applicant(s)

AEGERTER ET AL.

Examiner

Michael Kornakov

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 67-84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 67-84 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The instant application is a **CIP** of 09/041,901, filed March 13, 1998, now U.S. 6,350,319, which applicants are relying on in order to provoke an interference and be a senior party in the interference. However, the instant claims 67-84 are not supported by the disclosure of U.S. 6,350,319 and therefore, the priority date of March 13, 1998 can not be given to the subject matter, disclosed by the instant claims 67-84.

In explaining Examiner's position, the Examiner refers to the U.S. Patent 6,350,319, on which the instant specification is a CIP.

The issues of the instant claims NOT supported by the specification of U.S. Patent 6,350,319 are as follows:

a) the instant claims 67 and 84 recite a method of removing a metal film, including the steps of providing a substrate, having a first and an opposite second surface; wherein a film of **metal** material is **deposited on at least the first surface and a portion of unwanted film of deposited material is provided on the second surface**;

The US'319 in col.9, lines 18-25, recites that "For example, one or more of the processing stations 605 may execute an electrodeposition process of a metal, such as copper, on the wafer, while one or more of the other processing stations perform complimentary process, such as, for example clean/dry processing, pre-wetting processes, photoresist processes, etc".

US'319 in col.10, lines 28-42, recites "the ability to perform sequential processing of a single wafer using two or more processing fluids sequentially provided through a

Art Unit: 1746

single inlet of the reaction chamber. Still further, the ability to concurrently provide different fluids to the upper and lower surfaces of the wafer opens the opportunity to implement novel processing operations. For example, a processing fluid, such as HF liquid, may be supplied to a lower fluid inlet of the reaction chamber for processing the lower wafer surface while an inert fluid, such as nitrogen gas, may be provided to the upper fluid inlet. As such, the HF liquid is allowed to react with the lower surface of the wafer while the upper surface of the wafer is effectively isolated from HF reactions. Numerous other novel processes may also be implemented.”

The instant claims recite a method of removing a **metal** film deposited on the front side of a substrate and at least a portion of a back side of the substrate, thus indicating that metal film is deposited on both sides of the substrate. This is not expressly or implicitly provided by the specification of US’319. There is no teaching in US’319 about the deposition of metal film on both sides (which is not obvious), and thus about the ***presence of the unwanted metal film*** on the second surface. There is no teaching in US’319 about “unwanted film”, which is recited in claims 67, 75, 82 and the presence of which is also not obvious. Specifically regarding the instant claim 84, this claim recites a method of removing a **metal** deposited on at least one side of a substrate including the steps of ...preventing dissolution of **at least some of the material** on said one side and the step of dissolving at least a portion of the metal deposited on the other side of the substrate without dissolving **all** of the metal on said one side. Thus, this claim provides for feasible dissolving of metal deposited on said one side.

U.S. 6,350,319 teaches that the HF liquid is allowed to react with the lower surface of the wafer while the upper surface of the wafer is effectively isolated from HF reactions (col. 10, lines 27-42). Therefore, while teaching the ability to concurrently provide different fluids to the upper and lower surfaces of the wafer, US'319 fails to provide a method of **removing** a film of deposited **metal** material, including the steps of providing a specific substrate, wherein a **film of metal material** is deposited ***on at least the first surface of the substrate and a portion of unwanted film of deposited material is provided on the second surface;***

US'319 also fails to provide a **method of removing a metal** deposited on at least one side of a substrate including the steps of ... preventing dissolution of **at least some of the material** on said one side and the step of dissolving at least a portion of the **metal** deposited on the other side of the substrate without dissolving **all** of the metal on said one side, thus providing for feasible dissolving of metal deposited on said one side.

2. Accordingly, US'319 cannot serve as a priority document for the claimed subject matter, and therefore, the U.S. Patent to Lloyd et al (U.S. 6,290,865) can be applied as 102(e) / (a) reference.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 84 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

Art Unit: 1746

applicant regards as the invention. The recited in claim 84 "the material" constitutes an indefinite subject matter, because it is not clear what the term "the material" is attributed to. It is not clear, whether "the material" represents a deposited metal or any other portion of the substrate.

5. Claims 67-84 stand rejected under 35 U.S.C. 102(a/e) as being anticipated by Lloyd et al (U.S. 6,290,865), as per reasons of record.

Lloyd et al teach a method of removing a film of deposited metal material utilizing the same processing steps as instantly claimed. Therefore, all the limitations of the instant claims are met by Lloyd et al.

Response to Arguments

6. Applicant's arguments filed 04/14/2005 have been fully considered but they are not persuasive. Applicants are referring to col.9, line 18 of US'319 for the alleged support of the limitation that the copper deposited on the back side is protected from HF by an inert fluid, such as nitrogen. With all due respect to Applicants opinion, such limitation is absent from the above mentioned passage, as well as from any other place of US'319. As explained above the limitations of the instant claims are not supported or made obvious by the specification of US'319.

With regard to the proposed interference, it is noted that the explanation under 37 CFR 1.607(a)(6) must be considered by the examiner to determine whether the "substantially the same subject matter" requirement of 35 U.S.C. 135(b) has been met. In order for an application claim to be for "substantially the same subject matter" as a

Art Unit: 1746

patent claim, ***it must contain all the material limitations of the patent claim.*** Parks v. Fine, 773 F.2d 1577, 227 USPQ 432 (Fed. Cir. 1985), modified, 783 F.2d 1036, 228 USPQ 677 (1986). See also Corbett v. Chisholm, 568 F.2d 759, 196 USPQ 337 (CCPA 1977); In re Sitz, 331 F.2d 617, 141 USPQ 505 (CCPA 1964); Stalego v. Heymes, 263 F.2d 334, 120 USPQ 473 (CCPA 1959); Rieser v. Williams, 255 F.2d 419, 118 USPQ 96 (CCPA 1958); Emerson v. Beach, 215 F.2d 290, 103 USPQ 45 (CCPA 1955); In re Tanke, 213 F.2d 551, 102 USPQ 93 (CCPA 1954); Andrews v. Wickenden, 194 F.2d 729, 93 USPQ 27 (CCPA 1952); In re Frey, 182 F.2d 184, 86 USPQ 99 (CCPA 1950); Thompson v. Hamilton, 152 F.2d 994, 68 USPQ 161 (CCPA 1946). ***The fact that the application claim may be broad enough to cover the patent claim is not sufficient.*** In re Frey, 182 F.2d 184, 86 USPQ 99 (CCPA 1950).

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1746

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Kornakov
Primary Examiner
Art Unit 1746

June 20, 2005